United States Department of Agriculture

Forest Service

National Aviation Safety And Mishap Prevention Plan

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USDA FOREST SERVICE
AVIATION SAFETY AND MISHAP PREVENTION PLAN

CHAPTER 1

INTRODUCTION

1.1 PURPOSE

A. Forest Service Safety Policy Statement: As a world class leader in natural resources management, the Forest Service has a responsibility to protect its most valuable resource – our personnel. The success of our mission depends upon how effectively we incorporate safety and health into our culture and our daily behavior. We must take a proactive, inclusive approach in designing work projects and activities, and in developing supporting policies and procedures to ensure personnel safety.

In the Forest Service, safety is more than just a word. Safety is:
"The Relentless Pursuit of Employee Protection."

B. The USDA Forest Service Aviation Safety and Mishap Prevention Plan reflects our commitment to safety as a core organizational value and invests in a strategy that is dependent upon a strong aviation safety culture. The "Plan" establishes contemporary practices to ensure that personnel, property, and the public are protected from the risk of aircraft mishaps. Our stated philosophy is that "all accidents can be prevented."

Each unit should supplement this plan with Regional and Forest level aviation plans containing more specific details of local process and procedure.

1.2 GOALS

The ultimate goal of the Forest Service's Aviation Safety Program is "Zero Mishaps." Elements included in this goal are:

- Reduce risk by minimizing exposure to hazards.
- Foster and promote an aviation safety culture that institutionalizes safe practices, recognizes and rewards safe acts, and shares lessons learned.
- Eliminate mishaps through standardization and quality assurance processes.
- Improve performance of all aviation personnel through training and education.
- Enhance hazard awareness through effective communication.

1.3 CORE ELEMENTS

Core Elements of the Forest Service aviation safety program are:

- Eliminate loss of life, suffering from injury, and anguish of family and friends.
- Reduce the costs associated with mishaps.
- Achieve and maintain the highest quality aviation safety system.
- Provide uncompromising service in all matters pertaining to aviation safety to protect our people and preserve our resources.

CHAPTER 2

AVIATION SAFETY POLICY

2.1 AVIATION SAFETY POLICY

Direction found in FSM 6700 Safety and Health and FSM 5700 Aviation Management establish policy directing the implementation of the Aviation Safety and Mishap Prevention Plan. This plan by design constitutes the detail necessary to further enhance basic aviation safety policy and maintains the same authority.

2.2 SAFETY CULTURE

A. Safety culture is a term used to identify an overall approach to managing safety within an organization. Rather than being a set of rules or procedures, safety culture is an attitude or way of life that is practiced in all endeavors. An example of safety culture is the unprompted action of fastening your seat belt when entering any automobile, even a taxicab, when traveling. For organizations and individuals practicing a culture of safety, giving safety briefings and wearing a safety belt become second nature.

Safety awareness is a mental philosophy and demonstrated attitude fostered by effective management leadership. Forest Service aviation safety management ensures that standards and procedures are established, understood and followed. Promotion of safety awareness, positive attitudes, and appropriate training are key to shaping a culture that believes aviation accidents can be prevented.

B. The following are elements of safety culture that we embrace:

- Unqualified commitment to safety as a behavioral pattern and pervasive way of life by top management.
- Unambiguous expectations by each level of management as well as each peer group that, for all employees, safe life patterns and work habits are as normal as

breathing and must be practiced off the job as well as on the job.

- Availability of quality, standardized equipment with which to accomplish the assigned tasks.
- Clear, easily understood operating procedures, followed without deviation.
- Inclusive system of communications for collecting, analyzing, and exchanging incident data related to safety.
- Non-retribution for submission of incident data.
- Retraining without penalty or stigma when safety is involved.
- System for tracking incident and accident data, analysis of trends, and feedback of results.
- Peer acceptance that accidents are preventable, regardless of operations.
- Safety performance will be an important part of management/employee performance evaluation criteria.
- Peer acceptance that safety is a matter of lifestyle – a matter of culture.

CHAPTER 3

MANAGEMENT

3.1 ORGANIZATION

A. FSM 5720.4 Responsibility outlines the duties of individual positions within the organization. All personnel having aviation oversight responsibilities are expected to actively promote the Aviation Safety and Mishap Prevention Plan and to implement their own risk management programs. Aviation Safety personnel will work closely with Occupational Safety and Health functions to assure that a seamless safety program supports all FS missions.

B. The National Aviation Safety Center (NASC) is located in Boise, Idaho near the National Interagency Fire Center (NIFC). NASC Develops, maintains, and oversees safety and accident prevention systems including a website for safety information and data retrieval, SAFECOM mishap reporting system, accident investigations and lessons learned feedback, quality assurance/evaluation measures, safety awards, safety education program and resource library. Interagency participation is encouraged through training, common electronic media, cooperative prevention efforts, and co-located resources.

C. Regions are responsible for ensuring that all aviation operations are in compliance with policy and regulation and that a healthy safety culture is promulgated throughout the various levels of the organization.

3.2 AUTHORITIES AND RESPONSIBILITY

A. The following aviation positions form the core safety functions that provide

leadership in the aviation safety culture:

1. National Aviation Safety and Training Manager (NASTM). Provides leadership and oversight for aviation mishap prevention, safety training and education programs on a national level. The NASM maintains professional relationships with cooperators and other state and federal agencies to promote and foster the safety culture. Staff specialist positions include:

   a. National Aviation Safety and Training Specialists. Provides national coordination, technical support, quality assurance, and standardization for aviation safety training programs.

   b. National Fixed-Wing and Helicopter Standardization Officers. Develops national standardization for pilot training, qualification check rides and procedures for agency and contract pilots.

   c. National Airspace Coordinator. Monitors airspace issues, coordinates with military installations to alleviate in-flight hazards, assists with airspace coordination issues, and conducts training on basic airspace coordination.

2. Regional Aviation Safety Manager (RASM). This is a full time position responsible for developing and implementing a comprehensive regional aviation safety program. This includes policy development, safety awareness and mishap prevention, risk management and oversight, aviation safety training and education, and accident/incident reporting and investigation. Each Regional Aviation Safety Manager should maintain qualifications as a Qualified Technical Investigator.

3. Forest Health Protection (FHP) Aviation Safety Manager. Serves as a national focal point for all FHP aviation activities, including safety, training, projects, reviews, and to better integrate the FHP aviation program with Fire and Aviation Management.

B. The following groups serve to organize efforts in a manner that provides consensus and support to the aviation community and the safety culture:

1. Aviation Safety Council: Comprises the RASMs in a format that addresses aviation safety and management issues through regular meetings and conference calls.

2. Safety Technical Assistance Team (STAT): These groups are organized at the Region and report to the RAO and/or RASM. STAT teams provide valuable safety assistance during periods of peak use of operational resources. They may provide written evaluations of field operations or fix discrepancies on sight without further follow-up.

3. Interagency Aviation Training Steering Group: This group reviews annual safety reports to establish training needs, determine scope of training programs, and coordinate specific training curriculum that directly benefit the aviation safety program.

4. Interagency Committee for Aviation Policy (ICAP): Establishes subcommittees that affect the safety and training standards for Federal aviation programs. The USFS, through the Department of Agriculture, is a standing member of ICAP and as such complies with the requirements for reporting of operational and safety data.

CHAPTER 4

ACCIDENT PREVENTION SYSTEMS

4.1 A SYSTEMS APPROACH

The Forest Service Aviation Safety and Mishap Prevention Plan is predicated upon the application of best practices to a large decentralized organization. Units shall develop and maintain appropriate processes that will prevent mishaps. The Aviation Safety Council has the responsibility for maintaining the Aviation Safety and Mishap Prevention Plan on an "as needed" basis.

The practices fostered and promoted by the NASC include a risk management program, the SAFECOM mishap reporting system, accident investigations and lessons learned feedback, standardization and quality assurance measures, safety awards, and a safety education program that is supported by a resource library.

4.2 RISK MANAGEMENT

A. Risk management is the process of identifying, assessing, and controlling risks arising from operational factors and making decisions that balance risk costs with mission benefits.

The purpose of managing risk is to preserve human and material resources by identifying and preventing events that cause damage and injury to those resources. Three rules guide the risk management process:

1. Accept no unnecessary risk.
2. Make risk decisions at the proper level.
3. Accept risks only if benefits outweigh the potential safety costs.

B. Appendix 1 provides a more thorough discussion of Operational Risk Management. Units must assure that the Aviation Safety and Mishap Prevention Plan

incorporates the practices established for effective risk identification, assessment, and mitigation.

4.3 REPORTING HAZARDS, INCIDENTS, and MISHAPS

A. The SAFECOM system as authorized by FSM 5720.45, provides the backbone of our accident prevention communication network. Each individual and organizational unit has an obligation and responsibility to share aviation mishap prevention information. The communication tool provided to assist in this effort is the SAFECOM (FS Form 5700-14).

SAFECOMs are used to report any condition, observance, act, maintenance problem, or circumstance, which has potential to cause an aviation-related mishap. Submitting a SAFECOM is not a substitute for "on-the-spot" correction(s) to a safety concern, rather it is a tool used in the documentation, tracking, and follow-up corrective action(s) related to safety issues.

SAFECOMs may be submitted electronically via the Forest Service Aviation Website at: *www.safecom.gov,* or provided via a written copy to the RASM. In either case, the form may be submitted anonymously. Upon receipt, the RASM will submit the SAFECOM electronically. Corrective action(s) and comments should be documented on the form.

When a mishap involves damage or injury, notify the National Aviation Safety Center immediately by the most expeditious means available. A SAFECOM does not replace the requirement for initiating a Report of Accident/Incident. (FSM 5723.21)

B. Each Forest Service Unit shall have an aviation mishap response plan which addresses at a minimum; overdue and missing aircraft, a aircraft accident report form, emergency contact list and notification protocols for reporting aircraft mishap. This plan shall be updated annually. (FSM 5723.21)

C. Trends that cause a significant hazard will be addressed and disseminated by an Aviation Safety Alert. Alerts will be distributed on a red-bordered format, sent electronically from the NASC to Regions for distribution. Maintenance difficulties may also be identified as a trend in SAFECOM submissions. Maintenance issues worthy of action, but not considered to be significantly hazardous, may be distributed on blue-bordered Technical Alerts.

4.4 MISHAP INVESTIGATION

A. The primary purpose of aircraft accident and incident investigation is to identify and determine causal factors that may be used in the prevention of future occurrences. The Forest Service may be made a party to the official NTSB investigation team and as such must adhere to the requirements of the NTSB Investigator in Charge.

B. The Forest Service may choose to conduct an independent internal investigation of accidents or incidents to identify management factors that may contribute to system-wide adverse effects on the safety of our flight operations and personnel. The process for FS investigations is contained in the USDA Forest Service Accident Investigation Guide. Aviation investigation procedures may be found in Chapter 9 of the guide.

C. Fully qualified accident investigators (QTI) will conduct Forest Service aviation accident investigations. Each RASM should be qualified to conduct a comprehensive mishap investigation.

4.5 COMMUNICATION AND LESSONS LEARNED

A. Safety awareness is clearly one of the most important factors in safe and effective aviation operations. It is essential that, in addition to aircraft pilots, aviation users, supervisors, and managers be knowledgeable of the inherent hazards of aviation operations. Lessons learned through investigations and Accident Review Board (ARB) recommendations will be shared through a variety of tools including Safety Alerts, Technical Bulletins, official memoranda, information bulletins, training course materials, and official reports.

B. The NASC maintains a comprehensive database that serves to support our corporate memory and historical record of mishaps. This database is a crucial source of information for identifying long-term trends.

C. NASC maintains a website to facilitate communications with federal and contract personnel. The website contains an annual accident synopsis, safety mishap data, access to SAFECOM and Technical Bulletins, access to the DOI/OAS database, and an aviation safety bulletin board.

D. The Aviation Safety Bulletin Board provides a means for two-way communication between the NASC and the field. Topics of concern that do not warrant a SAFECOM may be shared on the bulletin board, and initiated by any federal employee or contractor wishing to participate.

4.6 AVIATION SAFETY AWARDS

A. Individuals who contribute significantly to the safety of Forest Service aviation operations, management, training, or other support roles should be recognized. Individual acts that prevent the occurrence of a mishap, prevent injury, result in the reduction of a significant risk, mitigate a hazard, provide exemplary service, or produce anything that enhances aviation safety may be eligible for an award.

B. There are several types of awards that may be used in recognition of a safety act including cash award, Time Off award, AIRWARDS, or other recognition appropriate to

the event. AIRWARDS will be issued as a non-monetary recognition of any deserving safety act.

C. The AIRWARDS program uses on the spot recognition. A compilation of AIRWARDS will be published periodically and distributed on a national basis.

D. The National Aviation Safety Award program is managed by the NASC to provide recognition that is distributed nationally on a periodic basis. Submissions will be made through the RASM to the NASM for review and approval.

4.7 ACCOUNTABILITY AND QUALITY MANAGEMENT

A. The Washington Office has responsibility for fire and aviation program reviews that satisfy our quality management efforts. Program evaluations may be accomplished using a team of FS, interagency and/or industry aviation and management officials to conduct surveys, audits, and reviews. The FS maintains records of program evaluation that comply with the standards established by Interagency Committee for Aviation Policy (ICAP) guidelines. Evaluations are generally conducted on a periodic, five-year cycle that accomplishes the review of each Region sequentially, in accordance with FSM 5700.

B. Safety evaluations are a means of determining compliance with safety standards and detecting unsafe conditions prior to experiencing a mishap involving possible loss of life, personal injury, or property damage. Feedback from field evaluations should be provided by RASM's to the NASC for the purpose of conducting routine and ongoing safety analysis, detection of trends, and early detection of systematic problems.

C. Preparedness reviews/site inspections are conducted on an annual basis by aviation specialists during field assistance visits to Forests, aviation bases, incident bases, and projects. RASM follow-up activity is desirable in order to verify that corrective actions are taken.

CHAPTER 5

AVIATION SAFETY EDUCATION

5.1 NATIONAL AVIATION TRAINING

The Forest Service Fire and Aviation Management program poses unique operational and management challenges that require specialized training. It is the responsibility of the Washington Office to oversee aviation operations training. The National Aviation Safety Center will provide oversight of aviation safety training and education.

A. The goal of the Aviation Safety Education Program is to provide a training program that supplements operational and developmental training efforts. It is our intention to integrate aviation safety training with our cooperators to the extent practicable. However, internal needs will take priority and where applicable, Forest Service policy will be the guiding principles for the development, content, and delivery of our training.

B. The USDA Forest Service provides professional and technical training for employees, cooperators, and contract personnel. Each operating unit must develop and implement plans for the identification of aviation training needs specific to its mission.

C. Contractor employee training promoted by NASC consists of topics that enhance aviation safety and accident prevention in the Forest Service mission, organization, and operations. Such training is not intended to provide qualification, proficiency, or return to current status for aircraft pilots.

APPENDIX 1

AVIATION OPERATIONAL RISK MANAGEMENT

I. Properly managing risk is good management decision. It provides for conservation of resources by avoiding unnecessary risk, helps management make informed decisions, identifying feasible and effective control measures where specific standards do not exist, and improving opportunity for successful mission accomplishment.

II. Successful outcomes can be achieved by applying the following steps of risk management to each flight or aviation mission:

a. Identify Risks. Identify specific risks associated with all specified and implied tasks. Determine the hazards, exposures, and probabilities causing these risks.

b. Assess Risks. Determine the magnitude, probability and severity of each risk.

c. Identify Controls. Appropriate controls may be in the areas of individual qualifications, performance of the aircraft, aircraft equipment, weather conditions, operating procedures, ground support equipment and people, personal protective equipment, communications, and others. Appropriate controls reduce the magnitude of mission-essential risks through proper application of established and identified controls.

d. Make Decisions. Make risk acceptance decisions by balancing risk benefits against risk magnitude, and eliminate unnecessary exposure. These decisions should include the appropriate level of FS management whenever possible. Sometimes the only decision to be made is to cancel the mission. More often the benefits justify the mission, but only if the risks can be minimized by controls over how and who conducts the mission. This also helps to reduce the potential costs of an accident to an acceptable level.

e. Implement Controls. Integrated specific controls into aviation plans and mission performance. Knowledge and understanding of controls down through the organization to each individual involved in aviation use is essential to the successful and safe outcome of each mission. This means following established agency policies and procedures in Forest Service manuals, handbooks, and guides. It means using trained personnel and following all contract specifications.

f. Monitor Operations. Review mission performance, suitability of controls, adherence to controls, and mission progress. Take prompt and appropriate corrective actions.

g. Risk management does not eliminate risks. The moving force driving aviation safety and training efforts is: “Safety through Prevention.” Risk management

is a key component in successful accident prevention.

III. There are several risk management decision-making models. The model prescribed for USFS use is provided in the Interagency Helicopter Operations Guide (IHOG). It is a management responsibility to enforce standards and controls, evaluate the effectiveness of controls and performance, and to mitigate risk as necessary.

APPENDIX 2

DEFINITIONS

Aircraft Accident. An occurrence associated with the operation of an aircraft, which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage. (ref. NTSB 830)

Aircraft Incident. An occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations.

Airspace Conflict. A near mid-air collision, intrusion, or violation of airspace rules.

Aviation Hazard. Any condition or set of circumstances that exposes aviation resources or personnel to unnecessary risk or harm.

Contractor. A person or company that is financially procured by the government to provide goods or services. Also referred to as a vendor.

Fatal Injury. Any injury, which results in death within 30 days of the accident.

First Aid. Any medical attention that involves no medical bill. If a physician prescribes medical treatment for less than serious injury and makes a charge for this service, that injury becomes "medical attention."

Forced Landing. A landing necessitated by failure of engines, systems, or components, which makes continued flight impossible, and which may or may not result in damage.

General Aviation. That portion of civil aviation that encompasses all facets of aviation except air carriers.

Incident with Potential. An incident that narrowly misses being an accident and in which the circumstances indicate significant potential for substantial damage or serious injury. The Forest Service Aviation Safety Manager, will determine final classification.

Maintenance Deficiency. An equipment defect or failure which affects or could affect the safety of operations, or that causes an interruption to the services being performed.

Medical Attention. An injury, less than serious, for which a physician prescribes medical treatment and makes a charge for this service.

Mishap. A general term used in aviation safety to describe the occurrence of an event that may include an accident or an incident. Mishaps do not include hazards.

Non-chargeable Accidents. Those accidents in which the Forest Service (FS) was not exercising operational control over the aircraft at the time of the accident, but in which FS employees or FS procured aircraft were involved.

Operator. Any person who causes or authorizes the operation of an aircraft, such as the owner, lessee, or bailee of an aircraft.

Precautionary Landing. A landing necessitated by apparent impending failure of engines, systems, or components, which makes continued flight inadvisable.

Serious Injury. Any injury which: (1) requires hospitalization for more than 24 hours, commencing within 7 days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second or third degree burns, or any burns affecting more than 5 percent of the body surface.

Statistically Accountable Accidents. Accidents in which the Forest Service exercised operational control of the aircraft.

Substantial Damage. Damage or failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or is damaged, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wing tips are not considered "substantial damage."